

Iowa Department of Natural Resources  
Environmental Protection Commission

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ITEM

7

DECISION

TOPIC

**Revisions to Recently Adopted Underground Storage Tank Rules  
Pertaining to Assessment of Risk to Public Water Supply Wells and Enter  
into a 28E Agreement with the Iowa UST Fund Board to Fund a Study.**

**ATTACHMENTS Iowa UST Fund Board and DNR 28E Agreement.  
Proposed Rule Amendment to 567 IAC 135  
Letter of Support**

The Department proposes to amend Chapter 135, risk based corrective action procedures, and we seek EPC approval of a 28E agreement between the UST Fund Board and the DNR to fund a study of UST petroleum releases and their potential to impact public water supply wells.

**Background**

Approximately two years ago, the DNR and other interested stakeholders began a process to review a computer model used to predict the areal extent of plumes from leaking underground storage tanks. The model was 10 years old and in many cases largely overestimated the areal extent of plumes when compared to actual plumes that had been measured in our 10 years of working with the model. The DNR worked with the UST Fund, Dr. LaDon Jones from Iowa State University, groundwater professionals, and the private insurance sector to develop this model. In order to replace the “old” model with the new model which is more reflective of measured plumes, a rulemaking package was proposed.

This rulemaking package was proposed to the EPC in November of 2007. At that time, representatives of the public water supply sector expressed concern that the new model may not provide adequate protection of their source water areas. EPC directed staff to go back and work with water supplies and the other stakeholders to make sure their concerns were taken into account. In January of 2008, a revised rule package was proposed to the EPC which was sent out for public comment. At the March meeting of the Administrative Rules Review Committee (ARRC), the regulated community expressed opposition to parts of the rule dealing with special public water supply well assessment procedures, and subsequently the ARRC directed the DNR to undertake a regulatory analysis of the rules and continue conversations with the stakeholders. For the next two months, regular meetings were held and a regulatory analysis of the rules was completed. We met again with ARRC in May where we identified some changes that could be made to the rules, but that these changes needed to go back to the EPC for action.

In June, 2008 the Commission adopted a package of amendments to the “risk based corrective action” (RBCA) rules in chapter 567 IAC 135. These rules were to become effective on August 6, 2008. At its July meeting, the ARRC expressed concern about the rules for some of the same reasons expressed in March and exercised its authority to delay the effective date of the rules for 70 days. The Committee encouraged opposing stakeholders and the DNR to attempt to reach resolution. (See Iowa Code section 17A.4). The delay of the effective date was set to expire on October 16, 2008. At the October 14, 2008 ARRC meeting, after hearing that a consensus among stakeholders had been reached on an alternative approach to the special well assessment procedures, the DNR and stakeholders recommended and the Committee approved a session delay on those parts of the rule that were objectionable.

## Alternative Resolution

1. The DNR and stakeholder groups have reached a tentative agreement to resolve the controversial aspects of the rule package.<sup>1</sup> The resolution requires a decision by the EPC to a) initiate further rulemaking to essentially rescind selected parts of the adopted rules, and b) approve a funding agreement between the Iowa Comprehensive Petroleum Underground Storage Tank Board (UST Fund) and the DNR.
2. The controversial aspect of the rule package is a provision that establishes a special risk evaluation process for public water supply wells (pws) that are located outside of the predicted area of groundwater contamination as determined by a two-dimensional model. The provision assigns responsibility for the initial pws risk evaluation to owners and operators of LUST sites and their groundwater professional. Under pre-existing rules, UST owners and operators had no responsibility to assess any wells located outside the modeled or predicted area of groundwater migration. The concern from a technical point of view has been that the model does not take into account the pumping influence of wells and vertical movement of groundwater that could extend to wells outside the modeled plume and that the rules are simply ignoring potential risk to these critical resources.
3. Funding agencies and some of the regulated community felt that the rules placed an excessive and uncertain financial burden on them to assess risk to wells over a large area where there could be multiple contributing sources and that the assessment could result in excessive costs without sufficient documentation or justification that there was a need for this new procedure.
4. The DNR negotiated a resolution with representatives from the two primary stakeholder groups. One group is represented by the Petroleum Marketers Management Insurance Company (PMMIC) which insures about 70% of UST sites in Iowa and the UST Fund which is a state agency that provides financial assistance for "old" UST releases that essentially occurred prior to October 1990. Representatives of the Iowa Association of Municipal Utilities, the Iowa Rural Water Association, and the Iowa Association of Water Agencies have represented the other major stakeholder interests.
5. The DNR and these groups have prepared a proposal which would require the Commission to initiate a rulemaking to revise the adopted rules by removing the provisions that allocated responsibility for conducting a pws risk assessment to owners and operators and the DNR. That provision also granted authority to the DNR to require owners and operators to take further corrective action if sufficient proof of risk was established through this process. The negotiated proposal would provide that the DNR and the Iowa UST Fund enter into a 28E agreement in which the DNR and the UST Fund would jointly conduct a "study" of potential risk to pws that are located outside the modeled groundwater plume.

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<sup>1</sup> The non-controversial parts of the rule package related to the substitution of a "recalibrated" groundwater transport model for the existing model which was thought to be unnecessarily overpredictive, i.e. it assumed contamination in groundwater moved horizontally much further than it actually does. A technical advisory group had studied the groundwater model that was adopted in 1996 and modified it based on comparison to actual groundwater movement data accumulated over the past 10 years or more. The "recalibrated" model is expected to in some cases significantly reduce or shrink the predicted area of movement and thereby reduce the predicted impact on "receptors". The rule package also had some revisions to implement current practice of conducting "corrective action meetings" with responsible owners and operators, funding sources and other interested parties to jointly develop corrective action plans to address contaminated sites. It had some non-controversial provisions regarding notice to public water supplies when releases occur within 2,500 feet of their wells and also a requirement to sample all wells within 100 feet of an actual groundwater plume. With resolution of the pws risk assessment provisions, all parties appear to support maintenance of these adopted amendments.

6. Under the basic terms of the 28E agreement (attached), the UST Fund would provide funding for no less than 125 sites to allow the DNR and the UST Fund to jointly study various types of risk assessment techniques, including "desktop" analyses, limited field work to determine the potential pumping influence of wells outside the modeled plume, recalibration of the existing two-dimensional model to more accurately identify risk to pumping wells and generally study the frequency and effects of impacts to wells outside the modeled plume. After the study is completed, and depending on the findings, the DNR would then have the option to initiate further rulemaking to propose a risk assessment procedure for wells located outside the modeled plume.

7. Under the terms of the 28E, if unacceptable risk to a pwsd is established, the UST Fund will provide funding to undertake further corrective action under two basic scenarios. One is where the DNR has classified the site as "no further action" (NFA) and issued a certificate but risk is subsequently established under this study such that the site must be "reopened". The other situation is where a NFA certificate has not been issued at the time a risk to a pwsd is established. In this case, the UST Fund would provide financial assistance under their existing remedial benefits program to claimants that are otherwise "fund eligible" (basically any sites with pre-1990 releases). But any site not fund eligible would not be granted funding to take necessary further action.

8. To address the concern that risk to a pwsd could be established under the study but funding for corrective action under this agreement may not be available in some cases, the DNR proposes an amendment to chapter 135 (per this notice) that would need to accompany the 28E agreement. The amendment gives the DNR discretion or "reservation authority" to require owners and operators to undertake further corrective action in the event that unacceptable risk to a pwsd is established during the study but funding under the 28E is insufficient or unavailable to undertake these actions. Without this provision, the 28E by its terms could identify a legitimate risk to a pwsd but provide no funding in certain cases. Without a rule amendment, the DNR may not have a legal basis to impose the regulatory obligations on the responsible owner since the well falls outside the modeled plume and under existing rules owners and operators may not have regulatory responsibility for wells outside the modeled plume. The stakeholders and the DNR are in consensus with the reservation language of the proposed rule.

Wayne Gieselman  
Administrator  
Environmental Protection Division

November, 2008

## Gallinger, Jerah [DNR]

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**To:** Tormey, Brian [DNR]  
**Subject:** RE: Letter of Support - Chapter 135 Rule Revisions and Proposed 28 E Agreement

**From:** JNorth7304@aol.com [mailto:JNorth7304@aol.com]

**Sent:** Monday, October 20, 2008 12:05 PM

**To:** Tormey, Brian [DNR]; Gieselman, Wayne [DNR]; Douskey, Elaine [DNR]; Wornson, David [DNR]

**Cc:** Pleima, Randy [Outside]; tim@marshalltownwater.com; benjamin@dmww.com; BHaug@iamu.org; Jlukensmeyer@cfunet.net; emily80@mchsi.com; Jsoenen@iamu.org; dave.scott@awwaia.org; Kinman@dmww.com; Mohr, Joel [Outside]; jasmithlaw@mchsi.com

**Subject:** Letter of Support - Chapter 135 Rule Revisions and Proposed 28 E Agreement

October 20, 2008

Wayne Gieselman  
Brian Tormey  
Elaine Douskey  
David Wornson  
Iowa Department of Natural Resources  
Des Moines, Iowa 50319

Dear Wayne, Brian, Elaine and David,

This e-mail and the attached letter to the Environmental Protection Commission (EPC) are being submitted on behalf of the following four professional organizations that represent drinking water utilities in Iowa:

- Iowa Association of Municipal Utilities
- Iowa Rural Water Association
- Iowa Section - American Water Works
- Iowa Association of Water Agencies

This letter is intended to confirm their support for the following items that the IDNR will discuss with the EPC at its meeting in November 2008.

- Approval of the proposed revisions to the recent rule changes made to Chapter 135, ("Technical Standards and Corrective Action Requirements for the Owners and Operators of Underground Storage Tanks") of the Iowa Administrative Code.
- Approval of the proposed 28E Agreement between the Underground Storage Tank (UST) Fund and the Iowa Department of Natural Resources to fund a study of UST petroleum releases and their potential impact on water supply wells.

Time constraints have precluded us from submitting a fully executed letter with original signatures. However, all signatories are being copied on this e-mail so as to confirm their endorsement.

Please contact me if you have any questions or if I can be of further assistance.

Thank you for your consideration.

Sincerely,

John D. North  
Co-Executive Director  
Iowa Association of Water Agencies  
319-377-3104  
[JNorth7304@aol.com](mailto:JNorth7304@aol.com)

October 20, 2008

Honorable Members  
Environmental Protection Commission  
C/O Iowa Department of Natural Resources  
Des Moines, Iowa 50319

Honorable Members of the Environmental Protection Commission:

This is written on behalf of the undersigned organizations to voice our support for the Iowa Department of Natural Resources' (IDNR) proposed actions regarding the Underground Storage Tank (UST) rules. These include the requested revisions to the recently adopted rule changes to Chapter 135, "Technical Standards and Corrective Action Requirements for the Owners and Operators of Underground Storage Tanks," Iowa Administrative Code and the adoption of the proposed 28E Agreement between the UST Fund and IDNR to fund a study of UST petroleum releases and their potential impact on public water supply wells.

Attached below for your reference is a copy of our letter written in support of the original rule revisions as adopted by the Environmental Protection Commission at its meeting in June 2008. As we noted in this letter, the potential contamination of aquifers and wells that supply drinking water is a real and significant concern. We supported the proposed amendments to Chapter 135 since they would approve the use of newly calibrated Tier 2 modeling software as sought by the regulated community while ensuring an appropriate level of protection for Iowa's water resources to include drinking water supplies. We believed that these rule revisions were fair, balanced and would provide the regulatory flexibility that would benefit all stakeholders.

Representatives for the drinking water industry have participated in the subsequent negotiations that were held to resolve concerns voiced by the tank industry representatives (UST Fund, petroleum marketers, tank insurance companies, et al). The current requested rule revisions and the proposed 28E Agreement resulted from these discussions.

Our support for the requested rule revisions and the 28 E Agreement is prompted by the following understandings and considerations:

- These collective actions will provide the same level of protection to public water wells as afforded by the rule revisions as originally adopted by the Environmental Protection Commission.

- The 28E Agreement will provide funding and a mechanism for assessment of those sites where a well is outside the modeled or predicted plume but still could potentially be at risk (e.g. assess the influence of a pumping well). The 28E Agreement will also ensure funding for those sites where remedial or other mitigation activities are warranted.

Please feel free to contact us if you have questions or if we can be of further assistance.

Thank you for your consideration.

Sincerely,

Robert Haug  
Executive Director  
Iowa Association of Municipal Utilities

Randy Pleima  
President  
Iowa Rural Water Association

Tim Wilson  
President  
Iowa Section – American Water Works Association

Jerald Lukensmeyer  
President  
Iowa Association of Water Agencies

Gary Benjamin  
Chairman  
Water Utility Council, Iowa Section-AWWA

cc: Wayne Gieselman, Iowa Department of Natural Resources  
Brian Tormey, Iowa Department of Natural Resources  
Elaine Douskey, Iowa Department of Natural Resources  
Dave Wornson, Iowa Department of Natural Resources

June 9, 2008

Honorable Members  
Environmental Protection Commission  
C/O Iowa Department of Natural Resources  
Des Moines, Iowa 50319

Honorable Members of the Environmental Protection Commission:

This is written on behalf of the undersigned organizations to voice our support for the proposed amendments to Chapter 135, "Technical Standards and Corrective Action Requirements for the Owners and Operators of Underground Storage Tanks," Iowa Administrative Code. Our collective memberships include almost all of the larger public, private and rural water utilities in Iowa. Our member utilities supply drinking water to approximately two (2) million residents of Iowa.

The potential contamination of aquifers and wells that supply drinking water is a real and significant concern. This is evidenced locally by the contamination problems experienced in Sioux City and Climbing Hill, and nationally by the BETX contamination that affected the aquifer and many of the wells that supply drinking water to the residents of Long Island in New York City. We also recognize that overly prescriptive regulations will not serve the best interests of the regulators, the regulated community or the citizens of Iowa.

We support the proposed amendments to Chapter 135 since we believe that they are fair, balanced and will provide the regulatory flexibility that will benefit all stakeholders. If adopted, the amendments will approve the use of newly calibrated Tier 2 modeling software as sought by the regulated community while ensuring an appropriate level of protection for Iowa's water resources to include drinking water supplies. The proposed revisions to Chapter 135 will provide greater flexibility for the assessment of LUST sites but will also enable the DNR to evaluate the specific conditions at each site and to tailor the assessment or mitigation requirements as it deems appropriate for that site.

Our support of the proposed amendments is prompted by the new special assessment procedures that are protective of public water supply wells. These assessment procedures are intended to address the inherent limitations of the Tier 2 modeling software. The modeling software only predicts the horizontal movement of a contaminant plume. It also does not evaluate the potential vertical movement of a plume nor does it account for the influences of a pumping well on the size or movement of a contaminant plume. The area that supplies recharge water to a pumping well can be extensive. The Iowa Geological Survey Bureau has determined that for approximately 37 percent, or more than one-third of the public water

supply wells in Iowa, the recharge water is drawn from a distance of 2,500 feet or greater (the five year capture zone). Consequently, we do not agree with the contention that the new protective measures for public water supply wells are not needed or are too onerous.

We also note that the proposed amendments afford the Owners and Operators the option to evaluate a site using the old or existing model.

In summary, we support the proposed amendments since we believe they are based on sound science and constitute good public policy. They will enhance the methods to assess the potential risks posed by a plume while ensuring adequate protection of drinking water supplies.

Thank you for your consideration.

Sincerely,

Robert Haug  
Executive Director  
Iowa Association of Municipal Utilities

Randy Pleima  
President  
Iowa Rural Water Association

Joel Mohr  
President  
Iowa Section – American Water Works Association

Jerald Lukensmeyer  
President  
Iowa Association of Water Agencies

Gary Benjamin  
Chairman  
Water Utility Council, Iowa Section-AWWA

cc: Wayne Gieselman, Iowa Department of Natural Resources  
Brian Tormey, Iowa Department of Natural Resources  
Elaine Douskey, Iowa Department of Natural Resources





# IOWA UNDERGROUND STORAGE TANK

## Financial Responsibility Program

**Board Members:** Susan E. Voss, *Chairperson*  
Michael L. Fitzgerald      Jeff W. Robinson      Jacqueline A. Johnson      Scott M. Schedel, *Administrator*  
Richard A. Leopold      Douglas M. Beech      James M. Holcomb  
Nancy Lincoln

October 20, 2008

Henry Marquardt, Chair  
Environmental Protection Commission  
c/o Wayne Gieselmann, Department of Natural Resources  
502 E. 9<sup>th</sup> St  
Des Moines, IA 50319

Ladies and Gentlemen,

The UST Fund Board fully supports the final solution to the Tier 2 model revisions and the study to further validate those revisions. Calibration, while long overdue up until now, should be a continuous process as the model is used over time and even further data is collected about its effectiveness in screening risk. To that end we view this as the start of that continuous process to ensure that the successful Risk Based model in Iowa remains just that—successful in its goals.

The solution all parties agreed to implement is to move forward with the calibrated Tier 2 model, while having an agreement between DNR and the UST Fund that allows for the study of potential impacts to wells outside of that modeled plume to ensure stringent protection. The study, unlike the proposed rules, allows for moving outside the current RBCA framework as a vehicle to study shortcomings and strengths in that framework so that continued adjustments can be made to protect human health. It also allows for study of sites that were closed out under the old model to give a broader perspective, than just the newly reported releases, in evaluating the models overall effectiveness. Additionally, the rule filing was modified to reflect this agreement and clarify DNR authority in the event the study discovers risks previously unidentified. This solution strengthens the UST program, both in terms of environmental protection, and development of sound scientific protocols. This solution will ensure that Iowa will continue to be recognized as the leader in cost effective environmental protection.

The parties have worked in good faith to reach this agreed upon compromise. The solution as proposed is fair to industry and provides greater protection to our environment and our water supplies.

Again, thank you for all the work and good faith from both the Commission and the Department in getting to this point of implementing the successful solution.

Sincerely,

Scott M. Schedel  
Administrator

Cc: IUST Board Members  
Elaine Douskey, IDNR  
Wayne Gieselmann, IDNR  
Brian Tormey, IDNR

**ENVIRONMENTAL PROTECTION  
COMMISSION[567]**

**Notice of Intended Action**

Pursuant to its rulemaking authority in Iowa Code section 455B.474, the Environmental Protection Commission (EPC) proposes to amend Chapter 135, “Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks,” Iowa Administrative Code.

The EPC adopted rules published in the July 2, 2008 Administrative Bulletin as ARC 6892B. The rules were scheduled to take effect on August 6, 2008. The rules contained some provisions which were relatively uncontroversial and some rules that were controversial. The more controversial rules in part established a policy and procedure for the assessment of the potential risk of impact from underground storage tank (UST) releases to public water supply wells (pwsws) which are located outside the actual or modeled contaminated groundwater plume. The rules established an assessment protocol in which owners and operators of underground storage tanks (UST) and the Department shared responsibility to initially conduct sufficient assessment of soil and groundwater contamination to determine the likelihood that an UST release could impact a pwsww. If sufficient evidence of potential or actual impact was established, the rules placed responsibility on the owner and operator to conduct further risk assessment and/or corrective action as necessary to protect human health and safety.

In response to public comment, some of which supported and some of which objected to the rules, the Administrative Rules Review Committee (ARRC) at a public meeting on July 8, 2008 imposed a 70-day delay on the entire rule package (ARC 6892B) pursuant to authority in Iowa Code section 17A.4(6). The ARRC requested that the primary stakeholders and the Iowa Department of Natural Resources (Department) staff attempt to reach a resolution of their differences. The 70-day delay would by law expire October 16, 2008.

The Department and other stakeholders reached an agreement which generally provides for the Department and the Iowa Comprehensive Petroleum Underground Storage Tank Fund Board (UST Fund) to enter into an inter-governmental agreement (28E Agreement) to jointly develop and implement a study of the risk to pwsws from UST petroleum releases. The study would be funded by public funds under the control of the UST Fund. The stakeholder agreement also required that the EPC agree to initiate a rulemaking to rescind those parts of the adopted rules in ARC 6892B which were controversial and related to the pwsw risk assessment protocol and to propose an amendment to the chapter clarifying the responsibility of owners and operators to take further assessment and corrective action in the event the study confirmed unacceptable risk to pwsws. The stakeholders agreed not to object to the non-controversial parts of the ARC 6892B rule package.

On October 14, 2008, the ARRC voted to impose a partial "session delay". See Iowa Administrative Bulletin \*\*\*\*\*. In recognition of the stakeholder agreement, the ARRC imposed a session delay only on those more controversial portions of the adopted rules as published in ARC 6982B which dealt with the pwsw assessment protocol. The effect of the partial delay was that the prior 70-day delay on the remainder of the rule package would expire as of October 16, 2008. The rules not subject to the "session delay" have therefore taken effect as of October 17, 2008.

At its public meeting on November 10, 2008, the EPC reviewed and approved the proposed stakeholder agreement, including the 28E Agreement and this Notice of Intended Action (NOIA).

These proposed amendments rescind those parts of the rules adopted in ARC 6892B which establish the policy and procedure for conducting risk assessment to pwsws outside the actual or modeled plume. The terms of the 28E Agreement are generally accepted as being sufficient to protect pwsws during the study. The terms of the 28E Agreement explicitly acknowledge that in the event sufficient proof of unreasonable risk to a pwsw is established during the study, the UST Fund would provide funding to take

necessary corrective action under two basic circumstances. One, where the UST site claimant is otherwise "fund eligible", assessment and corrective action to address risk to the pwsd would be treated as a fund-eligible cost. Second, where the Department has issued a "no further action certificate" (NFA certificate) prior to a determination of risk to the pwsd, the UST Fund agrees to provide funding for corrective action pursuant to the authority granted in Iowa Code section 455G.9(1)"k".\*

Under the 28E Agreement, it is possible that the study could result in establishing sufficient proof of risk to a pwsd which is located outside the actual or modeled groundwater plume. In recognition of this fact, the EPC proposes with the support of the participating stakeholders to add language to clarify the authority under chapter 567 IAC 135 to require the responsible UST owner and operator to undertake further assessment and corrective consistent with the risk based corrective action rules when the Tier 2 groundwater model is shown to be "under predictive".

Given the long period of public participation and the extensive stakeholder participation in the issues surrounding these amendments, the Department is conducting one public hearing. The hearing will be held in Des Moines, Iowa at the Wallace State Office Building, \*\*\*\*\* on \*\*\*\*\*.

Written comments may be submitted by mailing or emailing them no later than [insert a date at least 20 days from publication date].

Elaine Douskey, UST Section Supervisor  
Iowa Department of Natural Resources  
Wallace State Office Building  
Des Moines, IA 50310  
Email: elaine.douskey@dnr.iowa.gov

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The 28E agreement between the Department and the UST Fund involves the expenditure of funds but not as a direct result of this rulemaking. The agencies have agreed to undertake this study pursuant to their joint statutory authorities. Therefore, the

a fiscal impact statement in accordance with Iowa Code section 17A.4(3) and 25B.6 is deemed to be unnecessary.

These amendments are intended to implement Iowa Code section 455B.474.

\*This provision generally provides that the Department and UST Fund enter into an agreement to provide a funding mechanism to address unreasonable risk which is discovered after issuance of an NFA certificate and which is not the result of a release which occurs after the release for which the NFA certificate has been issued.

The following amendments are proposed.

**ITEM 1: Amend rule 135.2 by rescinding the following definitions:**

~~“Sensitive area” means a screening tool used to determine if a public water supply well warrants a more in-depth assessment. It is not intended to be a mechanism to assign a risk classification to the public water supply well receptor. “Sensitive area” describes the area within the Iowa Geological Survey’s designated five-year capture zone for any public water supply well or, if the Iowa Geological Survey has not designated a five-year capture zone for a public water supply well, the area within a 2,500-foot radius of the public water supply well and where the Iowa Geological Survey has given the public water supply well aquifer a source water protection aquifer designation of “susceptible” or “highly susceptible.”~~

**ITEM 2. Amend subrule 135.8(1) by adopting new paragraph "e" as follows:**

e. Pathway re-evaluation. Prior to issuance of a no further action certificate in accordance with 135.12(10) and Iowa Code section 455B.474(1)(h)(3), if it is determined that the conditions for an individual pathway that has been classified as "no action required" no longer exist, or it is determined that the site presents an unreasonable risk to a public water supply well and the model used to obtain the pathway clearance

under predicts the actual contaminant plume, the individual pathway shall be further assessed consistent with the risk based corrective action provisions in 135.8-12.

**ITEM 3: Amend subrule 135.9(4) by rescinding paragraph "f" as follows:**

~~f. Receptor evaluation for public water supply wells. If a public water supply well is located within 2,500 feet of the underground storage tank source area, a Tier 2 assessment must be completed for this pathway in accordance with 135.10(455B), unless the department agrees with the recommendation of the owner or operator's groundwater professional that it is unlikely the public water supply well is at risk, even without the benefit of soil and groundwater plume definition and a Tier 2 pathway assessment. The groundwater professional may take into account the factors specified in 135.10(11)“h.”~~

**ITEM 4: Amend subrule 135.10(4)"a" and "b" as follows:**

**135.10(4) Groundwater ingestion pathway assessment.**

a. Pathway completeness. Unless cleared at Tier 1, this pathway is complete and must be evaluated under any of the following conditions: (1) the first encountered groundwater is a protected groundwater source; or (2) there is a drinking water well or a non-drinking water well within the modeled groundwater plume or the actual plume as provided in 135.10(2)“j” and 135.10(2)“k.” ~~A public water supply screening and risk assessment must be conducted in accordance with 135.10(4)“f” for this pathway.~~

b. Receptor evaluation. All drinking and non-drinking water wells located within 100 feet of the largest actual plume (defined to the appropriate target level for the receptor type) must be tested, at a minimum, for chemicals of concern as part of the receptor evaluation. Actual plumes refer to groundwater plumes for all chemicals of concern. Untreated or raw water must be collected for analysis unless it is determined to be infeasible or impracticable. ~~The certified groundwater professional or the department may request additional sampling of drinking water wells and non-drinking water wells as part of its evaluation.~~

All existing drinking water wells and non-drinking water wells within the modeled plume or the actual plume as provided in paragraph “a” must be evaluated as actual

receptors. Potential receptors only exist if the groundwater is a protected groundwater source. Potential receptor points of exposure are those points within the modeled plume or actual plume that exceed the potential point of exposure target level. The point(s) of compliance for actual receptor(s) is the receptor. The point(s) of compliance for potential receptor(s) is the potential receptor point of exposure as provided in 135.10(2)“j” and 135.10(2)“k.”

**ITEM 5: Amend subrule 135.10(4) by rescinding paragraph "f" and renumbering the remainder of the subrule.**

~~f. Public water supply well assessment. The groundwater professional shall identify all public water supply wells located outside the applicable modeled plume but within 2,500 feet of the leaking underground storage tank site. The certified groundwater professional shall conduct a preliminary assessment of the potential risk of impact from the underground storage tank release to the public water supply well based on available information and taking into account the assessment factors in 135.10(11)“h” and other relevant considerations. The certified groundwater professional shall submit a public water supply well risk assessment report either prior to or along with the Tier 2 site cleanup report. The risk assessment shall, at a minimum, provide an analysis of the potential risk of impact from the underground storage tank site release to the public water supply well and a recommendation as to whether it is unlikely the underground storage tank release poses an unreasonable risk of impact to the well. If the groundwater professional determines that a professional judgment cannot reasonably be offered without collection of further data, the report shall make a recommendation as to what further data might be developed to assess the risk to the well.~~

f.g. Plume definition. The groundwater plume shall be defined to the applicable Tier 1 level for actual receptors except, where there are no actual receptors and the groundwater is a protected groundwater source, the plume shall be defined to the Tier 1 level for potential receptors.

g.h. Pathway classification. This pathway shall be classified as high risk, low risk or no action required in accordance with 135.12(455B).

~~h.i.~~ Corrective action response. Corrective action must be conducted in accordance with 135.12(455B). Abandonment and plugging of wells in accordance with 567—Chapters 39 and 49 is an acceptable corrective action response.

~~i.j.~~ Use of institutional controls. The use of institutional controls may be used to obtain no action required pathway classification. If the pathway is complete and the concentrations exceed the applicable Tier 1 level(s) for actual receptors, the drinking or non-drinking water well must be properly plugged in accordance with 567—Chapters 39 and 49 and the institutional control must prohibit the use of a protected groundwater source (if one exists) within the actual or modeled plume as provided in 135.10(2)“j” and 135.10(2)“k.” If the Tier 1 level is exceeded for potential receptors, the institutional control must prohibit the use of a protected groundwater source within the actual or modeled plume, whichever is greater. If concentrations exceed the Tier 1 level for drinking water wells and the groundwater is a protected groundwater source, the owner or operator must provide notification of the site conditions on a department form to the department water supply section, or if a county has delegated authority, then the designated county authority responsible for issuing private water supply construction permits or regulating non-public water well construction as provided in 567—Chapters 38 and 49.

~~j.k.~~ Notification of well owners. Upon receipt of a Tier 2 site cleanup report and as soon as practicable, the department shall notify the owner of any public water supply well identified within the Tier 2 site cleanup report that a leaking underground storage tank site is within 2,500 feet and an assessment has been performed.

**ITEM 6. Amend subrule 135.10(11) by rescinding paragraph “h”:**

~~h. Review of the public water supply receptor risk assessment. The department shall review the public water supply well risk assessment report submitted pursuant to 135.10(4) independently or as part of its review of the Tier 2 site cleanup report. Factors which the department may consider when reviewing the risk assessment report include, but are not limited to:~~

~~(1) The location of the underground storage tank site within a sensitive area as defined in 135.2(455B) for any identified public water supply well and if so, the potential risk of~~



~~impact to the well taking into account the well's capture zone and the aquifer susceptibility designation.~~

~~(2) Reports of petroleum constituents in the raw or finished water samples from the public water supply well.~~

~~(3) Whether corrective action may be required or has been completed for other receptors or pathways which could prevent impact to the public water supply well.~~

~~(4) Test results showing the presence or absence of detectable levels of petroleum constituents in a public water supply well, and to what extent the underground storage tank site release or other facilities in the area may be a source or contributing source.~~

~~(5) The presence of elevated concentrations of chemicals of concern in the soil or groundwater relative to the distance to the public water supply well and groundwater fate and transport data from other contaminated sources in the vicinity.~~

~~(6) Available information on the pumping capacity of the public water supply well and related zone of capture.~~

~~(7) Detections of chemicals in water samples tending to establish that the integrity of the well has been compromised or that there is a connection between the contaminated aquifer and the well's source water aquifer.~~

~~(8) Available information, including hydrogeological data from other sources in the vicinity, as to the nature and extent of any confining layer between the public water supply well aquifer and the contaminated aquifer.~~

~~(9) Information supplied from the public water supply well operator including but not limited to well construction, age, integrity, and pumping capacity.~~

~~(10) Water quality data and detections of chemicals tending to establish that the integrity of the well has been compromised or that there is a connection between the contaminated aquifer and the public water supply well.~~

~~(11) The distance between the leaking underground storage tank site and the public water supply well.~~

~~(12) The age of the release.~~

~~(13) Alternative modeling including, but not limited to, mass flux modeling.~~

~~If the department concurs with the certified groundwater professional's risk analysis and recommendation that it is unlikely the underground storage tank site release poses an~~

~~unreasonable risk of impact to the public water supply well, the department may classify the well as no action required.~~

~~If after taking into account the groundwater professional's risk analysis, professional recommendations and other relevant data, the department does not accept the certified groundwater professional's recommendations, the department must demonstrate that there is a hydrogeological connection between the underground storage tank contaminated aquifer and the public water supply well and that the underground storage tank release more likely than not poses an unreasonable risk of impact to the public water supply well. If the department establishes this level of proof, it may disapprove the assessment report and require the owner and operator through their certified groundwater professional to submit a Tier 3 work plan. The work plan shall propose what further assessment methods and data would be sufficient to confirm the nature and extent of any risk of impact to the public water supply well from the underground storage tank site release. As an alternative to submitting a Tier 3 work plan for this receptor, owners or operators may participate in a corrective action meeting process to develop a Tier 3 work plan or other corrective action plan, which would be incorporated into a memorandum of agreement or other written agreement approved by the department.~~

**28E AGREEMENT**  
**BETWEEN the IOWA COMPREHENSIVE PETROLEUM UNDERGROUND STORAGE**  
**TANK FUND BOARD AND THE IOWA DEPARTMENT OF NATURAL RESOURCES**  
**for THE STUDY OF PUMPING WELL INFLUENCE ON PETROLEUM**  
**CONTAMINATION PLUMES**

This Agreement is entered into by and between the Iowa Comprehensive Petroleum Underground Storage Tank Fund Board (hereinafter “Board”), with its Administrator’s office located at 2700 Westown Parkway, Suite 320, W. Des Moines, Iowa 50266, and the Iowa Department of Natural Resources (hereinafter “DNR”), located at 502 E. 9th Street, Des Moines, IA 50319. This Agreement is entered into pursuant to Iowa Code chapter 28E and Iowa Code sections 455G.5 and 455G.6(15), and is effective as of the date it is fully executed by all parties.

**I. PURPOSE**

In 2006, the Software Investigation Committee (a committee including DNR staff and interested stakeholders) was formed to examine the risk based corrective action (RBCA) Tier 2 software used for evaluating potential risks from petroleum releases. The purpose of the Committee was to investigate the possibility of making the Tier 2 model more representative of actual risk posed by the existence of contamination at leaking underground storage tank (LUST) sites. The Committee concluded the model should be adjusted to provide a more realistic predicted plume size; however, the DNR has some concerns that an at-risk pumping well may not be identified because of the smaller projected plumes in the recalibrated Tier 2 model, and that a two-dimensional model and traditional two-dimensional sampling regime at LUST sites may not adequately characterize pumping influences of the well on contaminant plume movement or vertical migration.

The purpose of this Agreement is to establish the terms and conditions under which the Board will provide funding to the DNR to evaluate the risk posed by UST petroleum contamination to public water supply wells that are located outside the actual or modeled groundwater plume and which may otherwise have been classified no action required with a Tier 1 or Tier 2 risk assessment. The study will incorporate and evaluate the criteria in ITEM 5 of ARC 6892B as published in the July 2, 2008 edition of the Iowa Administrative Bulletin.

At a minimum the study will screen no less than 125 new, current or historical LUST sites. The results of the study will be used to modify RBCA rules to ensure adequate protective screening is in place to identify and address any unreasonable risk to human health through public water supplies. The intent in the broadest sense, is to provide for continued calibration of the Tier 2 model to ensure it is an appropriate screening tools for risk posed to relevant receptors.

The parties mutually agree that nothing contained in this agreement is intended to limit,

modify, change, expand, restrict, rescind or otherwise alter the statutory or regulatory authority, duties or responsibilities of either party.

## **II. TERM**

Unless otherwise terminated in accordance with the terms of this Agreement, the Agreement shall be in effect for five years from its effective date, or the completion of the study. Upon completion of the study, should results indicate a change in Chapter 567 IAC 135 (RBCA) rules is warranted, the term and conditions specified in the agreement regarding well assessment and funding shall be extended to sufficiently be protective of wells during the period under which rules changes are made and finalized.

## **III. ADMINISTRATION**

This Agreement shall be administered by the Board and its Administrator in consultation with the DNR. All administrative decisions concerning this Agreement shall be undertaken pursuant to the terms outlined herein.

## **IV. RESPONSIBILITIES**

The DNR and the Board shall retain all powers and duties conferred by their respective enabling acts, but shall assist each other in the exercise of these powers and the performance of these duties in the following manner:

### **A. DNR RESPONSIBILITIES**

1. Provide regulatory oversight of sites using the calibrated Tier 2 model.
2. Identify sites that warrant additional study, beyond the required Tier 1 or Tier 2 risk assessment, for which the department believes the public water supply well may potentially be at risk. The DNR may use any criteria for selection of these sites.
3. Jointly develop scope of work for the additional study to be completed consistent with Item 5 in ARC 6892B as published July 2, 2008 in the Iowa Administrative Bulletin.
4. Jointly review and evaluate proposals in the selection of qualified professionals to perform the requested scope(s) of work.
5. Consolidate and track results of studies as they are completed.
6. If the results of the study of public water supply wells located outside the actual or modeled groundwater plumes indicate that additional assessment procedures are required to adequately protect public drinking water

supplies, the DNR shall promulgate rules to outline those procedures.

7. Assist the Board in securing any grants or funding to offset the costs associated with this agreement.

## **B. BOARD RESPONSIBILITIES**

1. Provide funding for study at sites that DNR identifies for additional study with regard to pumping wells located outside the identified Tier 1 search radius or Tier 2 actual or modeled plume.
2. Jointly develop scope of work for the additional study to be completed consistent with Item 5 in ARC 6892B as published July 2, 2008 in the Iowa Administrative Bulletin.
3. Jointly review and evaluate proposals in the selection of qualified professionals to perform the requested scope(s) of work.
4. Assist DNR with the evaluation of data obtained as studies are completed under this agreement.
5. Provide for the completion of work or direct funding through any applicable agreements or sources to address risk associated with specific sites for which a No Further Action certificate is issued during the term of this agreement that are proven through the study under this agreement to be likely to impact a public water supply well not identified in the calibrated Tier 2 model receptor ID plume.
6. Provide benefits to otherwise Fund eligible sites identified in the study that the DNR determines and reasonably demonstrates pose an unreasonable risk to public water supplies consistent with Iowa Code Section 455B.474 despite meeting the No Action Required standard in the calibrated model in IAC 567 Chapter 135 but for which a No Further Action certificate has not been issued.
7. Provide for corrective action at sites under any agreement pursuant to 455G.9(1)(k) at sites that have been issued a No Further Action certificate but for which the risk evaluation under this Agreement demonstrates that the site poses an unreasonable risk to a public water supply not identified by the calibrated model.
8. If the results of the study of public water supply wells located outside the actual or modeled groundwater plumes indicate that additional assessment procedures are required to adequately protect public drinking water supplies, creating a DNR responsibility to promulgate rules to outline those procedures, the Board shall continue providing funding under items 6 and 7 of this section beyond the term of this agreement and at least until the aforementioned rules are adopted.

## **V. FINANCING**

The Board shall pay all costs associated with the administration of this Agreement in accordance with the terms of this Agreement. The DNR shall pay all costs associated with DNR personnel.

## **VI. AMENDMENT**

This Agreement may be amended from time to time by written agreement of the Parties. All amendments shall be in writing, signed by both Parties, and filed with the Secretary of State and recorded with the Polk County Recorder.

## **VII. TERMINATION**

**A. Termination Upon Mutual Consent.** This Agreement may be terminated upon the mutual written consent of the parties.

**B. Termination By One Party.** Notwithstanding anything in this Agreement to the contrary, and subject to the limitations, conditions, and procedures set forth below, either party to this Agreement shall have the right to terminate this Agreement without penalty by giving sixty (60) days' written notice to the other party to the Agreement as a result of any of the following:

1. There are insufficient funds or resources available to allow a party to fulfill its obligations under this Agreement;
2. A change in the law prevents or substantially impairs a party's ability to participate in this Agreement; or
3. Failure to perform responsibilities described in this Section IV of this Agreement at a quality or quantity that can be reasonably expected by the other party.

## **VIII. NOTICES**

Whenever notices and correspondence are to be given under this Agreement, the notices shall be given by personal delivery to the other party, or sent by mail, postage prepaid, to the other party as follows:

### To the Board

Iowa UST Fund Board  
2700 Westown Parkway, Suite 320,  
W. Des Moines, Iowa 50266

### To the DNR

Iowa Department of Natural Resources  
Iowa Department of Natural Resources  
UST Section  
502 E. 9th Street

Des Moines, IA 50319

**IX. APPLICABLE LAW**

This Agreement is to be governed by the laws of the State of Iowa.

**X. FILING AND RECORDING**

It is agreed the Board will electronically file this Agreement with the Secretary of State, and electronically file any amendment, modification, or notice of termination of this Agreement within thirty days as provided in Iowa Code section 28E.8 (2007).

**IN WITNESS WHEREOF**, and in consideration of the mutual covenants set forth herein and for other good and valuable consideration, the receipt, adequacy, and legal sufficiency of which are hereby acknowledged, the parties have entered into this 28E Agreement and have caused their duly authorized representatives to execute this 28E Agreement.

**IOWA COMPREHENSIVE PETROLEUM  
UNDERGROUND STORAGE TANK  
FUND BOARD**

**IOWA DEPARTMENT OF NATURAL  
RESOURCES  
IOWA DEPARTMENT OF NATURAL  
RESOURCES**

BY: \_\_\_\_\_  
Susan Voss, Chair

BY: \_\_\_\_\_  
Richard Leopold, Director

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_